

**Environmental Quality Incentives Program  
California Drought Response Initiative  
2009**

**Program Description**

The USDA Natural Resources Conservation Service (NRCS) is providing financial and technical assistance to agricultural producers to address drought-related problems on their farms and ranches. In areas of extended severe and/or extreme drought, and those areas with irrigation water delivery reductions due to drought, assistance is available for activities that reduce wind erosion from cropland fallowed due to lack of water, helping to stretch limited irrigation water supplies, improving survival of orchards, and protecting rangeland plant communities.

Funding for this initiative is provided through the Environmental Quality Incentives Program (EQIP). This initiative provides technical planning and financial assistance, administered through EQIP contracts, to implement eligible practices that meet specific NRCS standards and guidelines. The highest priority EQIP applications that provide the greatest environmental benefit will be ranked highest in awarding funding through an evaluation process. Payments are limited to 75% of the estimated average cost of applying the practice. Limited Resource, Socially Disadvantaged, Indian Tribes, and Beginning Farmers and Ranchers may be eligible for a 90% payment rate. In addition, representatives of these groups are eligible to receive a 30 percent advance payment for the cost of materials associated with implementation of approved conservation practices.

Participants must first obtain NRCS contract approval prior to the purchase and installation/application of a practice. Any system or practice installed/applied prior to contracted execution is not eligible unless the applicant has been granted a waiver of this requirement by the NRCS State Conservationist. All payments are made after work is complete, project costs have been incurred and documented, and all certifications are complete as required by the contract. Applicants can apply to the NRCS State Conservationist for a waiver of the prior approval requirement. Waivers will be evaluated on a case by case basis.

Program signup will begin April 8<sup>th</sup>, 2009 and end May 8<sup>th</sup>, 2009.

**Eligible Conservation Practices**

(See Appendix A for explanation of the practices and implementation requirements)

**California EQIP Program - Fiscal Year 2009**  
**Approved Practice List – EQIP Drought Response**

Practices approved for payment in California – EQIP Drought Response:

<b>Practice Code</b>	<b>Practice Name (Units)</b>
328	Conservation Crop Rotation (Ac)
340	Cover Crop (Ac)
342	Critical Area Treatment with Straw Mulch (Ac)
342	Critical Area Treatment with Silt Fences (Ft)
449	Irrigation Water Management – System Evaluations (No)
484	Mulching – Wood Chips (Ac)
344	Residue Management (Ac)
609	Surface Roughening (Ac)
660	Tree Pruning (Ac)
574	Spring Development Rehabilitation (No)
642	Livestock Well (No)
533	Pumping Plant (No)
614	Watering Facility (No)
516	Stock Water Pipeline (Ft)
472	Access Control (Ac)

**Eligible Counties**

Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Inyo, Kern, Kings, Lake, Lassen, Los Angeles, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Clara, Shasta, Sierra, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba.

**Where to apply?**

For information about the California EQIP Program or for application assistance contact the NRCS office closest to the proposed project location. NRCS office locations are available at <http://offices.sc.egov.usda.gov/locator/app?state=ca> . Consult this website for additional information regard local EQIP program descriptions on a county basis.

**Program Application:**

Contact the NRCS Service Center office listed above for EQIP program application information or visit the following website: [www.ca.nrcs.usda.gov/programs/eqip](http://www.ca.nrcs.usda.gov/programs/eqip) to obtain a downloadable application information. To be considered for the EQIP drought initiative, a complete application must be submitted to the local NRCS office by close-of-business (COB) Friday May 8, 2009. Incomplete applications cannot be ranked for funding, any incomplete application must be fully completed and resubmitted no later than (COB) Friday May 8, 2009.

Complete application must include:

- **Form NRCS-CPA-1200 Application:** Signed and dated by all program participants or authorized persons. Depending upon the applicant and existing records, these additional forms and documentation may need to be completed:
- **Form NRCS-CPA-1202:** Contract and Appendix, if program application is approved.
- **Form FSA-211 or NRCS-CPA-09:** Power of Attorney – if applicable (Entity applicants must submit this form).
- **Form AD-1026:** Highly Erodible Land Conservation - Wetland Conservation Certification.
- **Form CCC-901A:** Entity Member Information, if applicable.
- **Form CCC-926:** Payment Eligibility Average Adjusted Gross Income (AGI) Certification.
- **Form CA-LTP-5:** Producer Certification of Irrigation History, if applicable.
- **Land ownership or control:** The applicant may be required to provide evidence of control of land through ownership documents (deeds, etc) or lease information (rental agreements, permits, lease, etc).
- **Signature authority:** If the applicant is an entity, documents such as articles of incorporation, charter, bylaws, partnership agreements, trust agreements, wills and similar legal evidence.
- **Proof of Identity:** Authorized persons may be required to show valid state driver's license, passport or other personal identification as well as Social Security or EIN numbers, address and other information.

**Note:** Confidential and private information: Many of the program application forms or documentation require the applicant to provide sensitive, contact, financial or other confidential information. Disclosure of this data is voluntary, but failure to provide the required information in a timely manner may result in the deferral of an application or denial of a benefit payment. By law and policy, confidential, private and sensitive information is protected by USDA and employees and agency partners are subject to penalty and disciplinary action for inappropriate or mismanagement of private data.

## 2009 Drought EQIP Screening Worksheet (Maximum 65 points)

County: \_\_\_\_\_

Applicant: \_\_\_\_\_

**Screening Criteria:** Evaluation of the EQIP application and assignment into one of three categories (High, Medium, and Low) or to Deferred status.

Proposed Project Eligibility:	Yes	Action:	No	Action
<b>Applicant History:</b>  During the previous two EQIP program years (2007 and 2008), did the applicant have a USDA cost-share contract where: ___ One or more practices were two or more years behind schedule for installation, OR ___ The contract was cancelled without justification, OR ___ The contract was terminated for any reason, OR ___ Has the applicant declined to sign/accept a USDA program contract after NRCS preparation of the contract and approval of the application for funding assignment?		If "Yes" to any of these, defer application and send letter citing reason for deferral.		If "No" to all, proceed to Screening Criteria

### Screening Criteria:

Assign points that apply	Points
Farm or ranch located in Fresno, Humboldt, Kern, Kings, Lake, Lassen, Madera, Mariposa, Mendocino, Merced, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Clara, Shasta, Sierra, Sonoma, Stanislaus, Trinity, Tulare, or Tuolumne county (25 points)	
Farm or ranch located in another eligible county (5 points)	
Water storage and/or supply on grazed rangeland projected to be limited as the result of the drought (10 points)	
Delivered Irrigation Water supply <16% available (10 points)	
Delivered Irrigation Water supply <16% available (orchard) (30 points)	
Delivered Irrigation Water supply 16-50% available (5 points)	
Delivered Irrigation Water supply 16-50% available (orchard) (20 points)	
Wind erosion potential >135 tons per acre per year (10 points)	
Wind erosion potential 86 to 134 tons per acre per year (5 points)	
Total points	

### Category

- ☐ High (35 to 65 points)
- ☐ Medium (25 to 30 points)
- ☐ Low (less than 25 points)
- ☐ Deferred

## STATEWIDE RANKING CRITERIA WORKSHEET - Fiscal Year 2009

Detailed Ranking Criteria Worksheet			
Applicant Name:		County:	
Application Number:		Service Office:	
Evaluator Name:		Date:	

### **A. Local Priority Issues:**

Not applicable

### **B. Statewide Rank Criteria Questions:**

Question Number	Question	Points
	<i>NOTE: Select one or none of the following two options for items 1 and 2 and assign points accordingly</i>	
1	1. Irrigated Cropland – Soil Erosion: Option 1, The EQIP conservation plan and contract will result in significant reduction of erosion from wind to FOTG quality criteria standards. Use appropriate photo guide <sup>1</sup> for crop residues to identify current and desired soil cover and/or windbreak (silt fence or other.) conditions. This category applies to soil cover conditions of 20% or less. (Question only applies if land use is irrigated cropland and resource concern is addressed in program contract.) (10 Points) OR:	
2	2. Irrigated Cropland – Soil Erosion: Option 2, The EQIP conservation plan and contract will result in significant reduction of erosion from wind to FOTG quality criteria standards. Use appropriate photo guide <sup>1</sup> for crop residues to identify current and desired soil cover and/or windbreak (silt fence or other.) conditions. This category applies to soil cover conditions from 20-40%. (Question only applies if land use is irrigated cropland and resource concern is addressed in program contract.) (5 points)	
	<i>NOTE: Select one or none of the following three options for items 3,4 and 5 and assign points accordingly</i>	
3	3. Irrigated Cropland –Air Quality: Option 1, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for those areas which are within 3 miles of any or all of the following: urban area, major highway, airport, hospital, school, or other identified high risk human contact location such as those with environmental justice issues. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (25 points) OR:	
4	4. Irrigated Cropland –Air Quality: Option 2, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for those areas which are 3-5 miles of any or all of the following: urban area, major highway, airport, hospital, school, or other identified high risk human contact location such as those with environmental justice issues. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (20 points) OR:	
5	5. Irrigated Cropland –Air Quality: Option 3, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for those areas which are 5-10 miles of any or all of the following: urban area, major highway, airport, hospital, school, or other identified high risk human contact location such as those with environmental justice issues. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (10 points)	
	<i>NOTE: Select one or none of the following three options for items 6, 7 and 8 and assign points accordingly</i>	
6	6. Irrigated Cropland –Air Quality: Option 1, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for soils with very high wind erodibility indices as identified as Wind Erodibility Groups <sup>2</sup> (WEG) 1 and 2. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (15 points) OR:	
7	7. Irrigated Cropland –Air Quality: Option 2, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for soils with very high wind erodibility indices as identified as Wind Erodibility Groups <sup>2</sup> (WEG) 3, 4, and 4L. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (10 points) OR:	

8	8. Irrigated Cropland –Air Quality: Option 3, The implementation of the EQIP conservation plan and contract will reduce windborne dust potential to FOTG quality criteria standards for soils with very high wind erodibility indices as identified as Wind Erodibility Groups <sup>2</sup> (WEG) 5 and 6. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (5 points)	
	<i>NOTE: Select one or none of the following three options for items 9,10 and 11 and assign points accordingly</i>	
9	9. Grazed Rangeland – Wildlife: Option 1, The EQIP conservation plan and contract will result in significant reduction of drought related livestock impacts to riparian zone and surface water habitat by development of off-channel watering points and/or water storage improvements by taping into existing water developments. This would include conservation plans which be rapidly implemented using the following practices: Pipeline (516), Pumping Plant (533) and Watering Facility (640). (Question only applies if land use is grazed rangeland and the selected resource concerns are addressed in program contract.) (30 points) OR:	
10	10. Grazed Rangeland – Wildlife: Option 2, The EQIP conservation plan and contract will result in significant reduction of drought related livestock impacts to riparian zone and surface water habitat by development of off-channel watering sources, storage and/or distribution systems in fields where developing new water sources is required to address the resource concern. (Question only applies if land use is grazed rangeland and the selected resource concerns are addressed in program contract.) (15 points) OR:	
11	11. Grazed Rangeland – Wildlife: Option 3, The EQIP conservation plan and contract will result in some reduction of drought related livestock impacts to riparian zone and surface water habitat by development of off-channel watering sources, storage and/or distribution systems in fields where developing new water sources is required to address the resource concern. (Question only applies if land use is grazed rangeland and the selected resource concerns are addressed in program contract.) (5 points)	
	<i>NOTE: Questions 12-15 are to be addressed as stand alone criteria</i>	
12	12. Irrigated Cropland – Plants: The EQIP conservation plan and contract will reduce perennial plant mortality due to irrigation water delivery limitations through the implementation of pruning measures. (Question only applies if land use is irrigated cropland and the selected resource concerns are addressed in program contract.) (40 points)	
13	13. Irrigated Cropland/Irrigated Pastured – Water Quantity: The EQIP conservation plan and contract will help identify areas to improve the irrigation system and its management (Question only applies if land use is irrigated cropland or irrigated pasture that will be irrigated in 2009 and resource concern is addressed in program contract.) (30 points)	
14	14. Grazed Rangeland – Water Quality: The EQIP conservation plan and contract will result in significant reduction of drought related impacts to water quality in 303(d) <sup>3</sup> listed water bodies which specify pollutants/stressors as including at least one of the following: nutrients, temperature, pathogens or sediment. (Question only applies if land use is grazed rangeland and the selected resource concerns are addressed in program contract.) (5 points)	
15	15. Irrigated Pasture – Plants: The EQIP conservation plan and contract will include grazing management improvements in conjunction with surface irrigation system management improvements which reduce potential long term and high cost impacts to high value pasture. This is only applicable to pasture where irrigation water has been substantially reduced (less than 50% of normal year delivery quantity) but water deliveries are still available. (Question only applies if land use is irrigated cropland and resource concern is addressed in program contract.) (5 points)	
	<b><u>TOTAL (160 points maximum):</u></b>	

Notes:

<sup>1</sup>Print out and consult the following resources when interviewing applicants:

<http://www.nm.nrcs.usda.gov/Technical/tech-notes/agro/ag67.pdf> and [ftp://ftp-fc.sc.egov.usda.gov/ID/technical/conforms/picture\\_residue.pdf](ftp://ftp-fc.sc.egov.usda.gov/ID/technical/conforms/picture_residue.pdf); utilize the photo guide sheet which most closely matches the crop residue type being evaluated.

<sup>2</sup>For lands with multiple WEG categories, rate this factor according to the predominant WEG on the land considered for the conservation contract. Consult the Physical Soil Properties table from the most recent Soil Survey for the area of coverage or use the Soil Data Mart or other current data <http://soildatamart.nrcs.usda.gov/Survey.aspx?State=CA>. Reference document Exhibit 618-16, "Wind Erodibility Groups (WEG) and Index", USDA, NRCS, National Soil Survey Handbook (618-94, 430-VI-NSSH, 2008) <http://soils.usda.gov/technical/handbook/contents/part618ex.html#ex16>

<sup>3</sup>Consult the State Water Resources Control Board 303(d) list for water bodies considered under this criteria: [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists.shtml)

**C. National Priority Issues:**

1. Will the treatment you intend to implement using EQIP result in a considerable reduction of non-point source pollution, such as nutrients, sediment, pesticides, excess salinity in impaired watersheds with total maximum daily loads (TMDLs) where available, groundwater contamination or point sources such as contamination from confined animal feeding operations?	Yes <input type="radio"/> or No <input type="radio"/>
2. Will the treatment you intend to implement for water conservation or irrigation efficiency using EQIP result in a considerable reduction in water use?	Yes <input type="radio"/> or No <input type="radio"/>
3. Will the treatment you intend to implement using EQIP result in a considerable reduction of emissions, such as particulate matter, nitrogen oxides (NOx), volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards?	Yes <input type="radio"/> or No <input type="radio"/>
4. Will the treatment you intend to implement using EQIP result in a considerable reduction in soil erosion and sedimentation from unacceptable levels on agricultural land?	Yes <input type="radio"/> or No <input type="radio"/>
5. Will the treatment you intend to implement using EQIP result in a considerable increase in the promotion of at-risk species habitat conservation?	Yes <input type="radio"/> or No <input type="radio"/>
6. Will the treatment that you intend to implement using EQIP result in considerable benefits to residue management, nutrient management, air quality management, invasive species management, pollinator habitat, and animal carcass management technology or pest management?	Yes <input type="radio"/> or No <input type="radio"/>
7. Will the treatment that you intend to implement using EQIP result in energy conservation benefits?	Yes <input type="radio"/> or No <input type="radio"/>

## **ATTACHMENT A**

### **EQIP DROUGHT PRACTICES 2009**

#### **IRRIGATED CROPLAND**

##### **Conservation Crop Rotation (328)**

During water shortages, this practice may be used to rotate to crops that require less water. Under drought conditions, water quality may deteriorate, as normal water supplies become unavailable. Conservation crop rotation may be used to rotate to crops that can tolerate lower quality water, which may be the only water available. Different crops have varying degrees of sensitivity to salts and boron, so rotating to crops tolerant of these conditions may be effective during drought periods.

##### **Cover Crop (340) – Barley or other Small Grain**

The use of a small grain cover crop will protect fallowed fields from blowing wind during drought. If there is some available soil moisture or water, a producer can plant a small grain cover crop such as barley. Barley may be broadcast at 125 lbs per acre, drilled at 110 lbs per acre. Barley establishes quickly and adjusts its growth and tillering to moisture and fertility. Barley's fibrous root system effectively stabilizes soils. Barley is also somewhat tolerant of salinity, so lesser quality water could be used to establish. It would be allowable to harvest the grain, leaving a minimum of a 6 inch height standing stubble. The standing stubble shall be left, not tilled-under, for the remainder of the season to prevent wind erosion. Barley is drought and somewhat salt tolerant. Other small grains may be considered, depending on amount and quality of available moisture.

##### **Critical Area Treatment (342) - Straw Mulch**

Applying straw mulch to abandoned fields to prevent wind erosion and blowing soil is an option when there is no plant/crop residue left on fallowed cropland. Straw mulching is also an option when the soil is too sandy to hold a cloddy structure with surface roughening. The application of straw will serve as a protective cover in areas that have a high potential for erosion. Mulching requires some type of crimping, or other method, to prevent the straw from shifting in the wind. Straw mulch forms a loose layer when applied over a loose soil surface. Certified weed free straw and/or rice straw should be used. The application rate should be about 2 tons per acre, be 2-3 inches deep and cover at least 70 percent of the soil surface. The mulch should then be hand punched, roller punched or crimper punched to prevent blowing away.



### **Critical Area Treatment (342) - Silt Fence**

A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. Silt fencing detains drifting sand or soil behind the fence. Silt fences are suitable for perimeter control, such as around fields to protect roadways or adjacent fields from drifting soil. Silt fences must be trenched 6 inches deep and keyed-in at least 12 inches. A silt fence is a temporary action. This practice is most effective when installed in conjunction with other conservation practices.

### **Irrigation Water Management (449) - Surface Irrigation System Evaluation**

Funding for professional services for conducting a surface irrigation system evaluation on fields that will be irrigated in 2009. The purpose of this practice is to gather information the producer can use to conserve and stretch limited water supplies by evaluating the performance of the irrigation system and its management. In an evaluation, measurements are made during an irrigation event to track and quantify the destination of applied water to calculate uniformity and water losses. In addition, the producer is given the opportunity to describe his/her methods for determining when to irrigate and how much to apply (scheduling) to identify opportunities for improvement. A report is developed for the producer describing system performance including how uniformly the water is being applied, how much is being applied during the irrigation event, the effect of the current irrigation scheduling strategy and what improvements would be beneficial. Evaluation services may be available from local Irrigation Districts, private consultants, Resource Conservation Districts, or other agency-sponsored Mobile Labs. A list of consultants that may be able to provide evaluation services can be found at ([www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp](http://www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp)). Producers are strongly encouraged to select consultants who have participated in Cal Poly Irrigation and Research Center (ITRC) Irrigation System Evaluation courses or equivalent specialized training. System evaluation (uniformity) protocols/tools presented by Cal Poly ITRC ([www.itrc.org](http://www.itrc.org)) or NRCS National Engineering Handbook, Part 652, Irrigation Guides (<http://policy.nrcs.usda.gov/RollupViewer.aspx?hid=17092>) or their equivalent must be followed. Each program applicant is eligible for cost share on one evaluation of each type of irrigation method used on the farm. Furrow, border, sprinkler and micro (trickle or spray) are considered different types of irrigation methods.

Reports must include:

1. A narrative describing of how the irrigation system is currently being operated (i.e. set times, numbers of furrows, borders, or sprinkler or micro blocks per set, maintenance, flushing, run lengths, tailwater management, irrigation scheduling methods, etc.)
2. Graphical displays of water destinations (root zone storage, deep percolation, evaporation and runoff)
3. Narratives of quantified water destinations and computed distribution uniformity and application efficiency
4. A narrative discussion of alternatives for improving the system or it's operation
5. A narrative discussion of alternatives for improving irrigation scheduling (timing and amount to apply)

## **Irrigation Water Management (449) - Sprinkler or Micro Irrigation System Evaluation**

Funding for professional services for conducting a sprinkler or micro irrigation system evaluation on fields that will be irrigated in 2009. The purpose of this practice is to gather information the producer can use to conserve and stretch limited water supplies by evaluating the performance of the irrigation system and its management. In an evaluation, measurements are made during an irrigation event to track and quantify the destination of applied water to calculate uniformity and water losses. In addition, the producer is given the opportunity to describe his/her methods for determining when to irrigate and how much to apply (scheduling) to identify opportunities for improvement. A report is developed for the producer describing system performance including how uniformly the water is being applied, how much is being applied during the irrigation event, the effect of the current irrigation scheduling strategy and what improvements would be beneficial. Evaluation services may be available from local Irrigation Districts, private consultants, Resource Conservation Districts, or other agency-sponsored Mobile Labs. A list of consultants that may be able to provide evaluation services can be found at ([www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp](http://www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp)). Producers are strongly encouraged to select consultants who have participated in Cal Poly Irrigation and Research Center (ITRC) Irrigation System Evaluation courses or equivalent specialized training. System evaluation (uniformity) protocols/tools presented by Cal Poly ITRC ([www.itrc.org](http://www.itrc.org)) or NRCS National Engineering Handbook, Part 652, Irrigation Guides (<http://policy.nrcs.usda.gov/RollupViewer.aspx?hid=17092>) or their equivalent must be followed. Each program applicant is eligible for cost share on one evaluation of each type of irrigation method used on the farm. Furrow, border, sprinkler and micro (trickle or spray) are considered different types of irrigation methods.

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2. Graphical displays of water destinations (root zone storage, deep percolation, evaporation and runoff)
3. Narratives of quantified water destinations and computed distribution uniformity and application efficiency
4. A narrative discussion of alternatives for improving the system or its operation
5. A narrative discussion of alternatives for improving irrigation scheduling (timing and amount to apply)

## **Mulch - Wood Chips (484)**

Applying plant residues, by-products or other suitable materials, produced off-site, to the land surface will provide erosion control, will suppress weed growth, and conserve soil moisture. May be used on soils subject to erosion; on areas where wind erosion may cause airborne emissions; and where it is desirable to achieve weed control with little or no cultivation or herbicide use. When mulching with wood products (chips, bark, shavings) or other material,

they must be applied in an amount that will provide at least 70 percent ground cover. Wood chips may be applied to an entire field, or may be applied in strips. Wood chips shall be machine blown or hand spread to a uniform depth of approximately 3 inches. Chip sizes should be: width, from ½ inch to 1-1/2 inch; length, ½ inch to 1-1/2 inch; thickness, 1/8 inch to ½ inch.

### **Residue Management (344)**

Residue management is managing the amount, orientation and distribution of crop and other plant residue on the soil surface. May be used during drought periods when water to plant a second crop is not available. The most effective way to prevent erosion is to leave plant residue on the soil surface. At a minimum, at least 30% flat and standing residue will provide some soil protection. After harvest, it is beneficial to leave all crop residue, furrows, ridges and surface clods to protect the soil during windy periods. If weeds are present in the field, the weeds can be sprayed and left in place.

### **Surface Roughening (609)**

Plant material and residue on the soil is the best alternative to protect soil from erosion, but if all vegetative residue is lost, surface roughening may be employed to reduce soil erosion from wind. Surface roughening is performing tillage operations that create random roughness of the soil surface and utilizes implements such as listers. The basic principle in emergency tillage is the creation of a rough, cloddy land surface, which will resist the force of wind and trap blowing soil. Roughening reduces wind erosion and dust emission into the air. The type of soil on the site is key to success; sandy soils are more difficult to control than finer textured soils, which will hold a cloddy structure. Emergency tillage provides only temporary control, but can be very effective if it is properly applied. At best, emergency measures are short-lived. The direction of tillage should be perpendicular to the erosive winds to maximize protection. See the practice standard and specification for further information.

### **Tree Pruning (660)**

Most fruit and nut trees are sensitive to water shortages during specific periods of growth and development. Drought assistance for the pruning back of orchard trees to prevent fruit set, excessive water use and transpiration during drought periods. This practice may get trees through the year and nothing more. Heavy pruning can improve the survival chances through drought, but at the expense of production for years to come.

## **GRAZED RANGELAND**

In grazed rangeland areas of the state heavily affected by drought conditions, surface water resources such as water quality and riparian habitat are generally more at risk than at other times of the year. The tendency for ponds and springs to dry early in the season can result in livestock congregating in areas where water still occurs and in the absence of developed

livestock water sources, can lead to immediate impacts to water quality and lasting impacts to vegetation and associated habitat values. Where water for livestock can be developed off of channels and where sufficient storage can be enhanced, these resources can be substantially protected. The goal of all practices under this section is to protect these resources through making adequate livestock water available during the typical season of use. Each practice is a permanent improvement although temporary measures can be used in conjunction with these permanent structures.

### **Spring Development (574) - Rehabilitation**

Under this EQIP Drought sign-up, this practice is only allowed for the purpose of rehabilitating pre-existing and failed spring developments. Those spring developments which currently fail to capture water for the purpose of supplying livestock water away from other surface water bodies are eligible for replacement. These structures are designed to capture a portion of the spring water to be transported to temporary storage tanks or troughs while the remaining water and/or overflow from the spring development are allowed to continue to feed and maintain the spring. The design of spring developments are dependent upon the type of spring, but generally, the spring box, spring area and the immediate water collection area must be protected from ongoing grazing although flash grazing may be appropriate to improve the function of the spring by removing undesirable vegetation over time.

### **Water Well (642) - Livestock Water**

Well establishment is an eligible practice under the 2009 EQIP Drought sign up. Wells developed under this practice are solely for the purpose of supplying adequate livestock water. In cases where adequate ground water indicates that surface resources can be protected through the installation of a well, this practice would be considered as a potential livestock water supply solution.

### **Pumping Plant (533) - Livestock Water**

Under this EQIP Drought sign up, a pumping plant may greatly enhance the ability to manage the adequacy of livestock water distribution. It may be used in conjunction with some existing wells, springs or storage tanks depending upon design constraints. While access to power is not cost-shared under the EQIP, integrated solar pumping systems are encouraged as a way to manage the placement livestock water storage tanks and dependent troughs. Design considerations include required lift, pump design and pump protection measures such as housing and backflow devices.

### **Watering Facility (614)**

Under this EQIP Drought sign up, troughs and storage tanks for livestock water are key tools in providing sufficient water during the season of use. Storage tanks or troughs can be developed to protect sensitive resources from undue livestock pressure during drought periods. Storage tanks in particular can aid in providing necessary quantities of water from springs which may

provide less water during times of drought. Materials are typically fiberglass, concrete or galvanized steel. Design considerations include rate of trough recharge requirements, class of animal accessing troughs, gravity verses pumping requirements and wildlife escape measures for troughs and some tanks.

### **Pipeline (516) - Livestock Water**

Installation of new low pressure pipeline using approved materials is allowed under this EQIP Drought sign-up. These pipelines can be used to tie various water sources and pumps to storage tanks and troughs. Typical materials include schedule 40 PVC and are required to be buried in accordance with NRCS specifications. Design considerations used by NRCS include but are not restricted to pressure reduction valves, vents, risers, sizing and materials selection.

### **GRAZED IRRIGATED PASTURELAND**

During drought periods, irrigated pastures can be severely damaged as a result of excess grazing pressure resulting from reduced available forage. In many cases, severe defoliation of forage species can lead to conditions favoring invasive plant species as well as impairing the productivity of the pasture for a number of years. In some cases, it may be useful to combine strategic applications of available irrigation water with exclusion of livestock for the grazing season on pastureland.

### **Access Control (472)**

Access Control (472) sets the limits on how many grazing passes or degree of use which can occur along with a specified period of livestock exclusion. While most irrigated pastures benefit from cyclical rest periods, when irrigation water is substantially limited, rest periods tend to be longer to allow for plants to recover prior to grazing. During drought, it may be advantageous to limit grazing on a portion of the grazed fields along with reducing irrigation water to allow more water to be applied to other fields. Where irrigation water is altogether curtailed, it may be prudent to allow a limited number of grazing passes to prevent irreparable damage to forage species and significant impacts to forage production in the following years.

### **Irrigation Water Management (449) - Surface Irrigation System Evaluation**

Funding for professional services for conducting a surface irrigation system evaluation on fields that will be irrigated in 2009. The purpose of this practice is to gather information the producer can use to conserve and stretch limited water supplies by evaluating the performance of the irrigation system and its management. In an evaluation, measurements are made during an irrigation event to track and quantify the destination of applied water to calculate uniformity and water losses. In addition, the producer is given the opportunity to describe his/her methods for determining when to irrigate and how much to apply (scheduling) to identify opportunities for improvement. A report is developed for the producer describing system performance including how uniformly the water is being applied, how much is being applied during the irrigation event, the effect of the current irrigation scheduling strategy and what

improvements would be beneficial. Evaluation services may be available from local Irrigation Districts, private consultants, Resource Conservation Districts, or other agency-sponsored Mobile Labs. A list of consultants that may be able to provide evaluation services can be found at ([www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp](http://www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp)). Producers are strongly encouraged to select consultants who have participated in Cal Poly Irrigation and Research Center (ITRC) Irrigation System Evaluation courses or equivalent specialized training. System evaluation (uniformity) protocols/tools presented by Cal Poly ITRC ([www.itrc.org](http://www.itrc.org)) or NRCS National Engineering Handbook, Part 652, Irrigation Guides <http://policy.nrcs.usda.gov/RollupViewer.aspx?hid=17092> or their equivalent must be followed. Each program applicant is eligible for cost share on one evaluation of each type of irrigation method used on the farm. Furrow, border, sprinkler and micro (trickle or spray) are considered different types of irrigation methods.

Reports must include:

1. A narrative describing of how the irrigation system is currently being operated (i.e. set times, numbers of furrows, borders, or sprinkler or micro blocks per set, maintenance, flushing, run lengths, tailwater management, irrigation scheduling methods, etc.)
2. Graphical displays of water destinations (rootzone storage, deep percolation, evaporation and runoff)
3. Narratives of quantified water destinations and computed distribution uniformity and application efficiency
4. A narrative discussion of alternatives for improving the system or it's operation
5. A narrative discussion of alternatives for improving irrigation scheduling (timing and amount to apply)

### **Irrigation Water Management (449) - Sprinkler Evaluation**

Funding for professional services for conducting a sprinkler or micro irrigation system evaluation on fields that will be irrigated in 2009. The purpose of this practice is to gather information the producer can use to conserve and stretch limited water supplies by evaluating the performance of the irrigation system and its management. In an evaluation, measurements are made during an irrigation event to track and quantify the destination of applied water to calculate uniformity and water losses. In addition, the producer is given the opportunity to describe his/her methods for determining when to irrigate and how much to apply (scheduling) to identify opportunities for improvement. A report is developed for the producer describing system performance including how uniformly the water is being applied, how much is being applied during the irrigation event, the effect of the current irrigation scheduling strategy and what improvements would be beneficial. Evaluation services may be available from local Irrigation Districts, private consultants, Resource Conservation Districts, or other agency-sponsored Mobile Labs. A list of consultants that may be able to provide evaluation services can be found at ([www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp](http://www.cimis.water.ca.gov/cimis/infoIrrConsultant.jsp)). Producers are strongly encouraged to select consultants who have participated in Cal Poly Irrigation and Research Center (ITRC) Irrigation System Evaluation courses or equivalent specialized training. System evaluation (uniformity) protocols/tools presented by Cal Poly ITRC ([www.itrc.org](http://www.itrc.org)) or NRCS National Engineering Handbook, Part 652, Irrigation Guides

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Reports must include:

1. A narrative describing of how the irrigation system is currently being operated (i.e. set times, numbers of furrows, borders, or sprinkler or micro blocks per set, maintenance, flushing, run lengths, tailwater management, irrigation scheduling methods, etc.)
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4. A narrative discussion of alternatives for improving the system or it's operation
5. A narrative discussion of alternatives for improving irrigation scheduling (timing and amount to apply)